

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT		1. CONTRACT ID CODE N/A		PAGE OF PAGES 1 48	
2. AMENDMENT/MODIFICATION NO. 0001		3. EFFECTIVE DATE JUL. 08, 2002		4. REQUISITION/PURCHASE REQ. NO. N/A	
5. PROJECT NO. (If applicable)		6. ISSUED BY CODE		7. ADMINISTERED BY (If other than Item 6) CODE	
DEPARTMENT OF THE ARMY U.S. ARMY ENGINEER DISTRICT, LOS ANGELES LOS ANGELES, CALIFORNIA 90053-2325		DISTRICT ENGINEER U.S. ARMY ENGINEER DISTRICT, LOS ANGELES 911 WILSHIRE BLVD LOS ANGELES, CALIFORNIA 90053-2325 ATTN: CONTRACTING DIVISION			
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)		(✓) 9A. AMENDMENT OF SOLICITATION NO. DACA05-02-B-0002			
		X 9B. DATED (SEE ITEM 11) N/A			
		10A. MODIFICATION OF CONTRACTS/ORDER NO. N/A			
		10B. DATED (SEE ITEM 13) N/A			
CODE		FACILITY CODE			
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS					
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input checked="" type="checkbox"/> is not extended.					
Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.					
12. ACCOUNTING AND APPROPRIATION DATA (If required) N/A					
NOTE: ITEM 13 BELOW IS N/A.					
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.					
(✓) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. N/A					
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).					
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:					
D. OTHER (Specify type of modification and authority) N/A					
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.					
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) 557th DS Maintenance Shop Fort Irwin, CA 2 Encl. 1. Revised Pages: Front End (Page; 19, 20, 47, 48, 50, 51, 63 thru 65, 90 thru 93, 160, 16A thru 160F, 166), Section 02556A, 13930A-7, 13930A-12, 15400A-59, 15690A-10 2. Revised Drawings: See Revised Drawing List					
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.					
15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)			
15B. CONTRACTOR/OFFEROR (Signature of person authorized to sign)		15C. DATE SIGNED		16B. UNITED STATES OF AMERICA BY (Signature of Contracting Officer)	
				16C. DATE SIGNED	

REVISED DRAWING LIST

I74C-140.CAL C1.40 SITE & PAVING PLAN
I74C-142.CAL C1.42 ENLARGED SITE PLAN TANK TRAIL
I74C-150.CAL C1.50 GRADING & DRAINAGE PLAN
I74C-160.CAL C1.60 UTILITY PLAN
I74C-161.CAL C1.61 ENLARGED UTILITY PLAN
I74C-400.CAL C4.00 OVERALL JOINT PLAN
I74C-402.CAL C4.02 PARTIAL JOINT PLAN
I74C-403.CAL C4.03 PARTIAL JOINT PLAN
I74C-503.CAL C5.03 DETAILS
I74A-101.CAL A1.01 FLOOR PLAN AREA 'A'
I74A-109.CAL A1.09 REFLECTED CEILING PLAN AREA 'A'
I74A-112.CAL A1.12 REFLECTED CEILING PLAN AREA 'D'
I74A-115.CAL A1.15 MAINTENANCE SHOP ROOF PLAN
I74A-200.CAL A2.00 MAINTENANCE SHOP NORTH ELEVATIONS
I74A-201.CAL A2.01 MAINTENANCE SHOP SOUTH ELEVATIONS
I74A-202.CAL A2.02 MAINTENANCE SHOP EAST ELEVATIONS
I74A-203.CAL A2.03 MAINTENANCE SHOP WEST ELEVATIONS
I74A-205.CAL A2.05 UNIT DEPLOYMENT STORAGE BUILDING ELEVATIONS
I74A-206.CAL A2.06 GUARD HOUSE ELEVATIONS & BUILDING SECTION
I74A-303.CAL A3.03 MAINTENANCE SHOP BUILDING SECTIONS CONTINUED
I74A-517.CAL A5.17 MISCELLANEOUS DETAILS
I74A-603.CAL A6.03 DOOR SCHEDULE
I74A-604.CAL A6.04 DOOR SCHEDULE CONTINUED
I74S-002.CAL S0.02 GENERAL STRUCTURAL NOTES AND ABBREVIATIONS
I74S-101.CAL S1.01 FLOOR/FOUNDATION PLAN - AREA 'A'
I74S-102.CAL S1.02 FLOOR/FOUNDATION PLAN - AREA 'B'
I74S-103.CAL S1.03 FLOOR/FOUNDATION PLAN - AREA 'C'
I74S-104.CAL S1.04 FLOOR/FOUNDATION PLAN - AREA 'D'
I74S-105.CAL S1.05 FLOOR/FOUNDATION PLAN - AREA 'E'
I74S-106.CAL S1.06 FLOOR/FOUNDATION PLAN - AREA 'F'
I74S-107.CAL S1.07 ROOF FRAMING PLAN - AREA 'A'
I74S-108.CAL S1.08 ROOF FRAMING PLAN - AREA 'B'
I74S-109.CAL S1.09 ROOF FRAMING AND MEZZANINE PLANS - AREA 'C'
I74S-113.CAL S1.13 UNIT DEPLOYMENT STOR BLDG - FLR/FOUNDATION & ROOF FR. PLANS
I74S-114.CAL S1.14 GUARD HOUSE FLOOR/FOUNDATION & ROOF FRAMING PLANS
I74S-303.CAL S3.03 MAINTENANCE PIT SECTIONS - AREA 'F'
I74S-304.CAL S3.04 MAINTENANCE PIT SECTION - AREA 'C'
I74S-305.CAL S3.05 JOIST GIRDER SECTIONS - AREA 'A'
I74S-503.CAL S5.03 TYPICAL FOUNDATION DETAILS
I74S-508.CAL S5.08 TYPICAL ROOF FRAMING DETAILS
I74S-510.CAL S5.10 TYPICAL STEEL DECK DETAILS
I74S-511.CAL S5.11 TYPICAL COLD-FORMED STEEL & MISCELLANEOUS FRAMING DETAILS
I74S-514.CAL S5.14 JOIST GIRDER DETAILS
I74S-515.CAL S5.15 FRAMING DETAILS
I74M-101.CAL M1.01 FLOOR PLAN AREA 'C'
I74M-102.CAL M1.02 FLOOR PLAN AREA 'A'
I74M-105.CAL M1.05 FLOOR PLAN AREA 'D'
I74M-106.CAL M1.06 GUARD HOUSE HVAC PLAN
I74M-200.CAL M2.00 HVAC PIPING PLAN AREA 'A'
I74M-201.CAL M2.01 HVAC PIPING PLAN AREA 'D'
I74M-300.CAL M3.00 FLOOR PLAN
I74M-501.CAL M5.01 HVAC DETAILS
I74M-600.CAL M6.00 SCHEDULES
I74M-601.CAL M6.01 SCHEDULES
I74M-602.CAL M6.02 SCHEDULES

I74P-110.CAL P1.10 DOMESTIC WATER & REVERSE OSMOSIS PLAN, AREA 'F'
I74P-119.CAL P1.19 COMPRESSED AIR & POL SUPPLY DISTRIBUTION PLAN AREA 'C'
I74P-121.CAL P1.21 COMPRESSED AIR & POL SUPPLY DISTRIBUTION PLAN AREA 'F'
I74P-124.CAL P1.24 WASHRACK
I74P-509.CAL P5.09 PLUMBING DETAILS
I74P-510.CAL P5.10 PLUMBING DETAILS
I74E-100.CAL E1.00 ELECTRICAL LEGEND
I74E-210.CAL E2.10 DEMOLITION ELECTRICAL SITE PLAN AND LEGEND
I74E-211.CAL E2.11 ELECTRICAL SITE PLAN AND LEGEND
I74E-214.CAL E2.14 ELECTRICAL DETAILS III
I74E-215.CAL E2.15 GUARD HOUSE LIGHTING, POWER, COMMUNICATION FLOOR PLAN
I74E-310.CAL E3.10 POWER ONE-LINE DIAGRAM
I74E-312.CAL E3.12 POWER, COMMUNICATION & FIRE ALARM FLOOR PLAN - AREA 'B'
I74E-313.CAL E3.13 POWER, COMMUNICATION & FIRE ALARM FLOOR PLAN - AREA 'C'
I74E-511.CAL E5.11 TELEPHONE & LAN TERMINAL BACKBOARD
I74E-512.CAL E5.12 COMMUNICATION DETAILS
I74E-613.CAL E6.13 PANEL SCHEDULES - 4
I74E-614.CAL E6.14 PANEL SCHEDULES - 5

an advance payment.

(End of provision)

52.214-34 SUBMISSION OF OFFERS IN THE ENGLISH LANGUAGE (APR 1991)

Offers submitted in response to this solicitation shall be in the English language. Offers received in other than English shall be rejected.

(End of provision)

52.214-35 SUBMISSION OF OFFERS IN U.S. CURRENCY (APR 1991)

Offers submitted in response to this solicitation shall be in terms of U.S. dollars. Offers received in other than U.S. dollars shall be rejected.

(End of provision)

52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a firm, fixed price contract resulting from this solicitation.

52.225-12 NOTICE OF BUY AMERICAN ACT REQUIREMENT-- CONSTRUCTION MATERIALS (MAY 2002) - ALTERNATE I (MAY 2002)

(a) Definitions. Construction material, designated country construction material, domestic construction material, foreign construction material, and NAFTA country construction material, as used in this provision, are defined in the clause of this solicitation entitled "Buy American Act --Construction Materials under Trade Agreements" (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) Requests for determination of inapplicability. An offeror requesting a determination regarding the inapplicability of the Buy American Act shall submit the request with its offer, including the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11.

(c) Evaluation of offers. (1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers. (1) When an offer includes foreign construction material, other than designated country or NAFTA country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic, designated country, or NAFTA country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic, designated country, or NAFTA country construction material, and the offeror shall be required to furnish such domestic, designated country, or NAFTA country construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

52.233-2 SERVICE OF PROTEST (AUG 1996)

- (a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

Contracting Officer
911 Wilshire Blvd., Suite 1040
Los Angeles, California 90017

- (b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of provision)

make any payment using nonappropriated funds (to include profits from any covered Federal action), which would be prohibited under subparagraph (b)(1) of this clause, if paid for with appropriated funds.

(2) The Contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under subparagraph (c)(1) of this clause. An event that materially affects the accuracy of the information reported includes--

(i) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or

(ii) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or

(iii) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.

(3) The Contractor shall require the submittal of a certification, and if required, a disclosure form by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.

(4) All subcontractor disclosure forms (but not certifications) shall be forwarded from tier to tier until received by the prime Contractor. The prime Contractor shall submit all disclosures to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding Contractor.

(d) Agreement. The Contractor agrees not to make any payment prohibited by this clause.

(e) Penalties.

(1) Any person who makes an expenditure prohibited under paragraph (a) of this clause or who fails to file or amend the disclosure form to be filed or amended by paragraph (b) of this clause shall be subject to civil penalties as provided for by 31 U.S.C. 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

(2) Contractors may rely without liability on the representation made by their subcontractors in the certification and disclosure form.

(f) Cost allowability. Nothing in this clause makes allowable or reasonable any costs which would otherwise be unallowable or unreasonable. Conversely, costs made specifically unallowable by the requirements in this clause will not be made allowable under any other provision.

52.204-2 SECURITY REQUIREMENTS (AUG 1996) - ALTERNATE I (APR 1984)

(a) This clause applies to the extent that this contract involves access to information classified "Confidential," "Secret," or "Top Secret."

(b) The Contractor shall comply with (1) the Security Agreement (DD Form 441), including the National Industrial Security Program Operating Manual (DOD 5220.22-M); and (2) any revisions to that manual, notice of which has been furnished to the Contractor.

(c) If, subsequent to the date of this contract, the security classification or security requirements under this contract are changed by the Government and if the changes cause an increase or decrease in security costs or otherwise affect any other term or condition of this contract, the contract shall be subject to an equitable adjustment as if the changes were directed under the Changes clause of this contract.

(d) The Contractor agrees to insert terms that conform substantially to the language of this clause, including this paragraph (d) but excluding any reference to the Changes clause of this contract, in all subcontracts under this contract that involve access to classified information.

(e) If a change in security requirements, as provided in paragraphs (b) and (c), results (1) in a change in the security classification of this contract or any of its elements from an unclassified status or a lower classification to a higher classification, or (2) in more restrictive area controls than previously required, the Contractor shall exert every reasonable effort compatible with the Contractor's established policies to continue the performance of work under the contract in compliance with the change in security classification or requirements. If, despite reasonable efforts, the Contractor determines that the continuation of work under this contract is not practicable because of the change in security classification or requirements, the

Contractor shall notify the Contracting Officer in writing. Until resolution of the problem is made by the Contracting Officer, the Contractor shall continue safeguarding all classified material as required by this contract.

(f) After receiving the written notification, the Contracting Officer shall explore the circumstances surrounding the proposed change in security classification or requirements, and shall endeavor to work out a mutually satisfactory method whereby the Contractor can continue performance of the work under this contract.

(g) If, 15 days after receipt by the Contracting Officer of the notification of the Contractor's stated inability to proceed, (1) the application to this contract of the change in security classification or requirements has not been withdrawn, or (2) a mutually satisfactory method for continuing performance of work under this contract has not been agreed upon, the Contractor may request the Contracting Officer to terminate the contract in whole or in part. The Contracting Officer shall terminate the contract in whole or in part, as may be appropriate, and the termination shall be deemed a termination under the terms of the Termination for the Convenience of the Government clause.

(End of clause)

52.204-4 PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER (AUG 2000)

(a) Definitions. As used in this clause--

"Postconsumer material" means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Postconsumer material is a part of the broader category of "recovered material." For paper and paper products, postconsumer material means "postconsumer fiber" defined by the U.S. Environmental Protection Agency (EPA) as--

(1) Paper, paperboard, and fibrous materials from retail stores, office buildings, homes, and so forth, after they have passed through their end-usage as a consumer item, including: used corrugated boxes; old newspapers; old magazines; mixed waste paper; tabulating cards; and used cordage; or

(2) All paper, paperboard, and fibrous materials that enter and are collected from municipal solid waste; but not

(3) Fiber derived from printers' over-runs, converters' scrap, and over-issue publications.

"Printed or copied double-sided" means printing or reproducing a document so that information is on both sides of a sheet of paper.

"Recovered material," for paper and paper products, is defined by EPA in its Comprehensive Procurement Guideline as "recovered fiber" and means the following materials:

(1) Postconsumer fiber; and

(2) Manufacturing wastes such as--

(i) Dry paper and paperboard waste generated after completion of the papermaking process (that is, those manufacturing operations up to and including the cutting and trimming of the paper machine reel into smaller rolls or rough sheets) including: envelope cuttings, bindery trimmings, and other paper and paperboard waste resulting from printing, cutting, forming,

- (1) The name of the subcontractor.
- (2) The Contractor's knowledge of the reasons for the subcontractor being on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
- (3) The compelling reason(s) for doing business with the subcontractor notwithstanding its inclusion on the List of Parties Excluded from Federal Procurement and Nonprocurement Programs.
- (4) The systems and procedures the Contractor has established to ensure that it is fully protecting the Government's interests when dealing with such subcontractor in view of the specific basis for the party's debarment, suspension, or proposed debarment.

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within 10 calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than 365 calendar days after Notice to Proceed. The time stated for completion shall include final cleanup of the premises.

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEP 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of \$385.00 for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause.

52.211-15 DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS (SEP 1990)

This is a rated order certified for national defense use, and the Contractor shall follow all the requirements of the Defense Priorities and Allocations System regulation (15 CFR 700).

~~52.214-16 MINIMUM BID ACCEPTANCE PERIOD (APR 1984)~~

~~(a) "Acceptance period," as used in this provision, means the number of calendar days available to the Government for awarding a contract from the date specified in this solicitation for receipt of bids.~~

~~(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.~~

~~(c) The Government requires a minimum acceptance period of 60 calendar days.~~

~~(d) In the space provided immediately below, bidders may specify a longer acceptance period than the Government's minimum requirement.~~

~~The bidder allows the following acceptance period: _____ calendar days.~~

~~(e) A bid allowing less than the Government's minimum acceptance period will be rejected.~~

~~(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.~~

52.214-26 AUDIT AND RECORDS--SEALED BIDDING. (OCT 1997)

(a) As used in this clause, records includes books, documents, accounting procedures and practices, and other data, regardless of type and regardless of whether such items are in written form, in the form of computer data, or in any other form.

(b) Cost or pricing data. If the Contractor has been required to submit cost or pricing data in connection with the pricing of any modification to this contract, the Contracting Officer, or an authorized representative of the Contracting Officer, in order to evaluate the accuracy, completeness, and currency of the cost or pricing data, shall have the right to examine and audit all of the Contractor's records, including computations and projections, related to--

(1) The proposal for the modification;

(2) The discussions conducted on the proposal(s), including those related to negotiating;

(3) Pricing of the modification; or

(4) Performance of the modification.

(c) Comptroller General. In the case of pricing any modification, the Comptroller General of the United States, or an authorized representative, shall have the same rights as specified in paragraph (b) of this clause.

(d) Availability. The Contractor shall make available at its office at all reasonable times the materials described in reproduction, until 3 years after final payment under this contract, or for any other period specified in Subpart 4.7 of the Federal Acquisition Regulation (FAR). FAR Subpart 4.7, Contractor Records Retention, in effect on the date of this contract, is incorporated by reference in its entirety and made a part of this contract.

(a) Failure to make a good faith effort to comply with the subcontracting plan, as used in this clause, means a willful or intentional failure to perform in accordance with the requirements of the subcontracting plan approved under the clause in this contract entitled "Small Business Subcontracting Plan," or willful or intentional action to frustrate the plan.

(b) Performance shall be measured by applying the percentage goals to the total actual subcontracting dollars or, if a commercial plan is involved, to the pro rata share of actual subcontracting dollars attributable to Government contracts covered by the commercial plan. If, at contract completion or, in the case of a commercial plan, at the close of the fiscal year for which the plan is applicable, the Contractor has failed to meet its subcontracting goals and the Contracting Officer decides in accordance with paragraph (c) of this clause that the Contractor failed to make a good faith effort to comply with its subcontracting plan, established in accordance with the clause in this contract entitled "Small Business Subcontracting Plan," the Contractor shall pay the Government liquidated damages in an amount stated. The amount of probable damages attributable to the Contractor's failure to comply shall be an amount equal to the actual dollar amount by which the Contractor failed to achieve each subcontract goal.

(c) Before the Contracting Officer makes a final decision that the Contractor has failed to make such good faith effort, the Contracting Officer shall give the Contractor written notice specifying the failure and permitting the Contractor to demonstrate what good faith efforts have been made and to discuss the matter. Failure to respond to the notice may be taken as an admission that no valid explanation exists. If, after consideration of all the pertinent data, the Contracting Officer finds that the Contractor failed to make a good faith effort to comply with the subcontracting plan, the Contracting Officer shall issue a final decision to that effect and require that the Contractor pay the Government liquidated damages as provided in paragraph (b) of this clause.

(d) With respect to commercial plans, the Contracting Officer who approved the plan will perform the functions of the Contracting Officer under this clause on behalf of all agencies with contracts covered by the commercial plan.

(e) The Contractor shall have the right of appeal, under the clause in this contract entitled Disputes, from any final decision of the Contracting Officer.

(f) Liquidated damages shall be in addition to any other remedies that the Government may have.

~~52.219-23 NOTICE OF PRICE EVALUATION ADJUSTMENT FOR SMALL DISADVANTAGED BUSINESS CONCERNS (MAY 2001)~~

~~(a) Definitions. As used in this clause—~~

~~Small disadvantaged business concern means an offeror that represents, as part of its offer, that it is a small business under the size standard applicable to this acquisition; and either~~

~~(1) It has received certification by the Small Business Administration as a small disadvantaged business concern consistent with 13 CFR 124, Subpart B; and~~

~~(i) No material change in disadvantaged ownership and control has occurred since its certification;~~

~~(ii) Where the concern is owned by one or more disadvantaged individuals, the net worth of each individual upon whom the certification is based does not exceed \$750,000 after taking into account the applicable exclusions set forth at 13 CFR 124.104(c)(2); and~~

~~(iii) It is identified, on the date of its representation, as a certified small disadvantaged business concern in the database maintained by the Small Business Administration (PRO Net).~~

~~(2) It has submitted a completed application to the Small Business Administration or a Private Certifier to be certified as a small disadvantaged business concern in accordance with 13 CFR 124, Subpart B, and a decision on that application is pending, and that no material change in disadvantaged ownership and control has occurred since its application was submitted. In this case, in order to receive the benefit of a price evaluation adjustment, an offeror must receive certification as a small disadvantaged business concern by the Small Business Administration prior to contract award; or~~

~~(3) Is a joint venture as defined in 13 CFR 124.1002(f).~~

~~Historically black college or university means an institution determined by the Secretary of Education to meet the requirements of 34 CFR 608.2. For the Department of Defense (DoD), the National Aeronautics and Space Administration (NASA), and the Coast Guard, the term also includes any nonprofit research institution that was an integral part of such a college or university before November 14, 1986.~~

~~Minority institution means an institution of higher education meeting the requirements of Section 1046(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k, including a Hispanic serving institution of higher education, as defined in Section 316(b)(1) of the Act (20 U.S.C. 1101a)).~~

~~United States means the United States, its territories and possessions, the Commonwealth of Puerto Rico, the U.S. Trust Territory of the Pacific Islands, and the District of Columbia.~~

~~(b) Evaluation adjustment.~~

~~(1) The Contracting Officer will evaluate offers by adding a factor of 10 percent to the price of all offers, except—~~

~~(i) Offers from small disadvantaged business concerns that have not waived the adjustment;~~

~~(ii) An otherwise successful offer of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is equaled or exceeded (see section 25.402 of the Federal Acquisition Regulation (FAR));~~

~~(iii) An otherwise successful offer where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government;~~

~~(iv) For DoD, NASA, and Coast Guard acquisitions, an otherwise successful offer from a historically black college or university or minority institution; and~~

~~(v) For DoD acquisitions, an otherwise successful offer of qualifying country end products (see sections 225.000 70 and 252.225 7001 of the Defense FAR Supplement).~~

~~(2) The Contracting Officer will apply the factor to a line item or a group of line items on which award may be made. The Contracting Officer will apply other evaluation factors described in the solicitation before application of the factor. The factor may not be applied if using the adjustment would cause the contract award to be made at a price that exceeds the fair market price by more than the factor in paragraph (b)(1) of this clause.~~

~~(c) Waiver of evaluation adjustment. A small disadvantaged business concern may elect to waive the adjustment, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply to offers that waive the adjustment.~~

~~Offeror elects to waive the adjustment.~~

~~(d) Agreements. (1) A small disadvantaged business concern, that did not waive the adjustment, agrees that in performance of the contract, in the case of a contract for~~

~~(i) Services, except construction, at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern;~~

~~(ii) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern;~~

~~(iii) General construction, at least 15 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern; or~~

~~(iv) Construction by special trade contractors, at least 25 percent of the cost of the contract, excluding the cost of materials, will be performed by employees of the concern.~~

~~(2) A small disadvantaged business concern submitting an offer in its own name agrees to furnish in performing this contract only end items manufactured or produced by small disadvantaged business concerns in the United States. This paragraph does not apply in connection with construction or service contracts.~~

52.222-3 CONVICT LABOR (AUG 1996)

The Contractor agrees not to employ in the performance of this contract any person undergoing a sentence of imprisonment which has been imposed by any court of a State, the District of Columbia, the Commonwealth of Puerto Rico,

contract circumstances change so that any of its owned or operated facilities used in the performance of this contract is no longer exempt--

(1) The Contractor shall notify the Contracting Officer; and

(2) The Contractor, as owner or operator of a facility used in the performance of this contract that is no longer exempt, shall (i) submit a Toxic Chemical Release Inventory Form (Form R) on or before July 1 for the prior calendar year during which the facility becomes eligible; and (ii) continue to file the annual Form R for the life of the contract for such facility.

(d) The Contracting Officer may terminate this contract or take other action as appropriate, if the Contractor fails to comply accurately and fully with the EPCRA and PPA toxic chemical release filing and reporting requirements.

(e) Except for acquisitions of commercial items, as defined in FAR Part 2, the Contractor shall--

(1) For competitive subcontracts expected to exceed \$100,000 (including all options), include a solicitation provision substantially the same as the provision at FAR 52.223-13, Certification of Toxic Chemical Release Reporting; and

(2) Include in any resultant subcontract exceeding \$100,000 (including all options), the substance of this clause, except this paragraph (e).

~~52.225-9 BUY AMERICAN ACT CONSTRUCTION MATERIALS (MAY 2002)~~

~~(a) Definitions. As used in this clause--~~

~~Component means an article, material, or supply incorporated directly into a construction material.~~

~~Construction material means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.~~

~~Cost of components means--~~

~~(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the end product (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or~~

~~(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but~~

~~excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.~~

~~Domestic construction material means~~

~~(1) An unmanufactured construction material mined or produced in the United States; or~~

~~(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.~~

~~Foreign construction material means a construction material other than a domestic construction material.~~

~~United States means the 50 States and the District of Columbia, U.S. territories and possessions, Puerto Rico, the Northern Mariana Islands, and any other place subject to U.S. jurisdiction, but does not include leased bases.~~

~~(b) Domestic preference. (1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.~~

~~(2) This requirement does not apply to the construction material or components listed by the Government as follows: None~~

~~(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that~~

~~(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;~~

~~(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or~~

~~(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.~~

~~(c) Request for determination of inapplicability of the Buy American Act.~~

~~(1)(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including~~

~~(A) A description of the foreign and domestic construction materials;~~

~~(B) Unit of measure;~~

~~(C) Quantity;~~

~~(D) Price;~~

~~(E) Time of delivery or availability;~~

~~(F) Location of the construction project;~~

~~(G) Name and address of the proposed supplier; and~~

~~(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.~~

~~(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.~~

~~(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty free certificate may be issued).~~

~~(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.~~

~~(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.~~

~~(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.~~

~~(d) Data. To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:~~

~~===== Foreign and Domestic Construction Materials Price Comparison~~

~~=====~~
~~=====~~
~~Construction material description Unit of measure~~
~~Quantity Price (dollars) \1\~~
~~=====~~

~~Item 1~~

~~Foreign construction material.....~~

~~Domestic construction material... ..~~

~~Item 2~~

~~Foreign construction material.....~~
~~.....~~
~~Domestic construction material....~~
~~.....~~

~~Include all delivery costs to the construction site and any applicable duty~~
~~(whether or not a duty free entry~~
~~certificate is issued).~~

~~List name, address, telephone number, and contact for suppliers surveyed.~~
~~Attach copy of response; if oral,~~
~~attach summary.~~

~~Include other applicable supporting information.~~

52.225-11 BUY AMERICAN ACT --CONSTRUCTION MATERIALS UNDER TRADE
 AGREEMENTS (MAY 2002)

(a) Definitions. As used in this clause--

Component means an article, material, or supply incorporated directly into a construction material.

Construction material means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

Cost of components means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the end product.

Designated country means any of the following countries: Aruba, Austria, Bangladesh, Belgium, Benin, Bhutan, Botswana, Burkina Faso, Burundi, Canada, Cape Verde, Central African Republic, Chad, Comoros, Denmark, Djibouti, Equatorial Guinea, Finland, France, Gambia, Germany, Greece, Guinea, Guinea-Bissau, Haiti, Hong Kong, Iceland, Ireland, Israel, Italy, Japan.

(1) Exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation; and

(2) Are for a type of supplies described in paragraph (b)(3) of this clause.

252.247-7024 NOTIFICATION OF TRANSPORTATION OF SUPPLIES BY SEA (MAR 2000)

(a) The Contractor has indicated by the response to the solicitation provision, Representation of Extent of Transportation by Sea, that it did not anticipate transporting by sea any supplies. If, however, after the award of this contract, the Contractor learns that supplies, as defined in the Transportation of Supplies by Sea clause of this contract, will be transported by sea, the Contractor --

(1) Shall notify the Contracting Officer of that fact; and

(2) Hereby agrees to comply with all the terms and conditions of the Transportation of Supplies by Sea clause of this contract.

(b) The Contractor shall include this clause; including this paragraph (b), revised as necessary to reflect the relationship of the contracting parties--

(1) In all subcontracts under this contract, if this contract is a construction contract; or

(2) If this contract is not a construction contract, in all subcontracts under this contract that are for--

(i) Noncommercial items; or

(ii) Commercial items that--

(A) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(B) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(C) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

52.232-27 PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS (FEB 2002)

Notwithstanding any other payment terms in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer. Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(3) concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--(1) Types of invoice payments. For purposes of this clause, there are several types of invoice payments that may occur under this contract, as follows:

(i) Progress payments, if provided for elsewhere in this contract, based on Contracting Officer approval of the estimated amount and value of work or services performed, including payments for reaching milestones in any project.

(A) The due date for making such payments is 14 days after the designated billing office receives a proper payment request. If the designated billing office fails to annotate the payment request with the actual date of receipt at the time of receipt, the payment due date is the 14th day after the date of the Contractor's payment request, provided the designated billing office receives a proper payment request and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(B) The due date for payment of any amounts retained by the Contracting Officer in accordance with the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts, is as specified in the contract or, if not specified, 30 days after approval by the Contracting Officer for release to the Contractor.

(ii) Final payments based on completion and acceptance of all work and presentation of release of all claims against the Government arising by virtue of the contract, and payments for partial

deliveries that have been accepted by the Government (e.g., each separate building, public work, or other division of the contract for which the price is stated separately in the contract).

(A) The due date for making such payments is the later of the following two events:

(1) The 30th day after the designated billing office receives a proper invoice from the Contractor.

(2) The 30th day after Government acceptance of the work or services completed by the Contractor. For a final invoice when the payment amount is subject to contract settlement actions (e.g., release of claims), acceptance is deemed to occur on the effective date of the contract settlement.

(B) If the designated billing office fails to annotate the invoice with the date of actual receipt at the time of receipt, the invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

(2) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(2)(i) through (a)(2)(xi) of this clause. If the invoice does not comply with these requirements, the designated billing office must return it within 7 days after receipt, with the reasons why it is not a proper invoice. When computing any interest penalty owed the Contractor, the Government will take into account if the Government notifies the Contractor of an improper invoice in an untimely manner.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of mailing or transmission.)

(iii) Contract number or other authorization for work or services performed (including order number and contract line item number).

(iv) Description of work or services performed.

(v) Delivery and payment terms (e.g., discount for prompt payment terms).

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) For payments described in paragraph (a)(1)(i) of this clause, substantiation of the amounts requested and certification in accordance with the requirements of the clause at 52.232-5, Payments Under Fixed-Price Construction Contracts.

(ix) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(x) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232-38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(xi) Any other information or documentation required by the contract.

(3) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions

listed in paragraphs (a)(3)(i) through (a)(3)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment and there was no disagreement over quantity, quality, Contractor compliance with any contract term or condition, or requested progress payment amount.

(iii) In the case of a final invoice for any balance of funds due the Contractor for work or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(4) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor for payments described in paragraph (a)(1)(ii) of this clause, Government acceptance or approval is deemed to occur constructively on the 7th day after the Contractor has completed the work or services in accordance with the terms and conditions of the contract. If actual acceptance or approval occurs within the constructive acceptance or approval period, the Government will base the determination of an interest penalty on the actual date of acceptance or approval. Constructive acceptance or constructive approval requirements do not apply if there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. These requirements also do not compel Government officials to accept work or services, approve Contractor estimates, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes, and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(5) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(6) Additional interest penalty. (i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(6)(ii) of this clause, postmarked not later than 40 days after the date the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest was due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(b) Contract financing payments. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Subcontract clause requirements. The Contractor shall include in each subcontract for property or services (including a material supplier) for the purpose of performing this contract the following:

(1) Prompt payment for subcontractors. A payment clause that obligates the Contractor to pay the subcontractor for satisfactory performance under its subcontract not later than 7 days from receipt of payment out of such amounts as are paid to the Contractor under this contract.

(2) Interest for subcontractors. An interest penalty clause that obligates the Contractor to pay to the subcontractor an interest penalty for each payment not made in accordance with the payment clause--

(i) For the period beginning on the day after the required payment date and ending on the date on which payment of the amount due is made; and

(ii) Computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contract Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(3) Subcontractor clause flowdown. A clause requiring each subcontractor to use:

(i) Include a payment clause and an interest penalty clause conforming to the standards set forth in paragraphs (c)(1) and (c)(2) of this clause in each of its subcontracts; and

(ii) Require each of its subcontractors to include such clauses in their subcontracts with each lower-tier subcontractor or supplier.

(d) Subcontract clause interpretation. The clauses required by paragraph (c) of this clause shall not be construed to impair the right of the Contractor or a subcontractor at any tier to negotiate, and to include in their subcontract, provisions that--

(1) Retainage permitted. Permit the Contractor or a subcontractor to retain (without cause) a specified percentage of each progress payment otherwise due to a subcontractor for satisfactory performance under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions agreed to by the parties to the subcontract, giving such recognition as the parties deem appropriate to the ability of a subcontractor to furnish a performance bond and a payment bond;

(2) Withholding permitted. Permit the Contractor or subcontractor to make a determination that part or all of the subcontractor's request for payment may be withheld in accordance with the subcontract agreement; and

(3) Withholding requirements. Permit such withholding without incurring any obligation to pay a late payment penalty if--

(i) A notice conforming to the standards of paragraph (g) of this clause previously has been furnished to the subcontractor; and

(ii) The Contractor furnishes to the Contracting Officer a copy of any notice issued by a Contractor pursuant to paragraph (d)(3)(i) of this clause.

(e) Subcontractor withholding procedures. If a Contractor, after making a request for payment to the Government but before making a payment to a subcontractor for the subcontractor's performance covered by the payment request, discovers that all or a portion of the payment otherwise due such subcontractor is subject to withholding from the subcontractor in accordance with the subcontract agreement, then the Contractor shall--

(1) Subcontractor notice. Furnish to the subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon ascertaining the cause giving rise to a withholding, but prior to the due date for subcontractor payment;

(2) Contracting Officer notice. Furnish to the Contracting Officer, as soon as practicable, a copy of the notice furnished to the subcontractor pursuant to paragraph (e)(1) of this clause;

(3) Subcontractor progress payment reduction. Reduce the subcontractor's progress payment by an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (e)(1) of this clause;

(4) Subsequent subcontractor payment. Pay the subcontractor as soon as practicable after the correction of the identified subcontract performance deficiency, and--

(i) Make such payment within--

(A) Seven days after correction of the identified subcontract performance deficiency (unless the funds therefor must be recovered from the Government because of a reduction under paragraph (e)(5)(i)) of this clause; or

(B) Seven days after the Contractor recovers such funds from the Government; or

(ii) Incur an obligation to pay a late payment interest penalty computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty;

(5) Notice to Contracting Officer. Notify the Contracting Officer upon--

(i) Reduction of the amount of any subsequent certified application for payment; or

(ii) Payment to the subcontractor of any withheld amounts of a progress payment, specifying--

(A) The amounts withheld under paragraph (e)(1) of this clause; and

(B) The dates that such withholding began and ended; and

(6) Interest to Government. Be obligated to pay to the Government an amount equal to interest on the withheld payments (computed in the manner provided in 31 U.S.C. 3903(c)(1)), from the 8th day after receipt of the withheld amounts from the Government until--

(i) The day the identified subcontractor performance deficiency is corrected; or

(ii) The date that any subsequent payment is reduced under paragraph (e)(5)(i) of this clause.

(f) Third-party deficiency reports--(1) Withholding from subcontractor. If a Contractor, after making payment to a first-tier subcontractor, receives from a supplier or subcontractor of the first-tier subcontractor (hereafter referred to as a "second-tier subcontractor") a written notice in accordance with section 2 of the Act of August 24, 1935 (40 U.S.C. 270b, Miller Act), asserting a deficiency in such first-tier subcontractor's performance under the contract for which the Contractor may be ultimately liable, and the Contractor determines that all or a portion of future payments otherwise due such first-tier subcontractor is subject to withholding in accordance with the subcontract agreement, the Contractor may, without incurring an obligation to pay an interest penalty under paragraph (e)(6) of this clause--

(i) Furnish to the first-tier subcontractor a notice conforming to the standards of paragraph (g) of this clause as soon as practicable upon making such determination; and

(ii) Withhold from the first-tier subcontractor's next available progress payment or payments an amount not to exceed the amount specified in the notice of withholding furnished under paragraph (f)(1)(i) of this clause.

(2) Subsequent payment or interest charge. As soon as practicable, but not later than 7 days after receipt of satisfactory written notification that the identified subcontract performance deficiency has been corrected, the Contractor shall--

(i) Pay the amount withheld under paragraph (f)(1)(ii) of this clause to such first-tier subcontractor; or

(ii) Incur an obligation to pay a late payment interest penalty to such first-tier subcontractor computed at the rate of interest established by the Secretary of the Treasury, and published in the Federal Register, for interest payments under section 12 of the Contracts Disputes Act of 1978 (41 U.S.C. 611) in effect at the time the Contractor accrues the obligation to pay an interest penalty.

(g) Written notice of subcontractor withholding. The Contractor shall issue a written notice of any withholding to a subcontractor (with a copy furnished to the Contracting Officer), specifying--

(1) The amount to be withheld;

(2) The specific causes for the withholding under the terms of the subcontract; and

(3) The remedial actions to be taken by the subcontractor in order to receive payment of the amounts withheld.

(h) Subcontractor payment entitlement. The Contractor may not request payment from the Government of any amount withheld or retained in accordance with paragraph (d) of this clause until such time as the Contractor has determined and certified to the Contracting Officer that the subcontractor is entitled to the payment of such amount.

(i) Prime-subcontractor disputes. A dispute between the Contractor and subcontractor relating to the amount or entitlement of a subcontractor to a payment or a late payment interest penalty under a clause included in the subcontract pursuant to paragraph (c) of this clause does not constitute a dispute to which the Government is a party. The Government may not be interpleaded in any judicial or administrative proceeding involving such a dispute.

(j) Preservation of prime-subcontractor rights. Except as provided in paragraph (i) of this clause, this clause shall not limit or impair any contractual, administrative, or judicial remedies otherwise available to the Contractor or a subcontractor in the event of a dispute involving late payment or nonpayment by the Contractor or deficient subcontract performance or nonperformance by a subcontractor.

(k) Non-recourse for prime contractor interest penalty. The Contractor's obligation to pay an interest penalty to a subcontractor pursuant to the clauses included in a subcontract under paragraph (c) of this clause shall not be construed to be an obligation of the Government for such interest penalty. A cost-reimbursement claim may not include any amount for reimbursement of such interest penalty.

(l) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

(End of clause)

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations by the Government.

(b) Weather conditions The Contractor shall satisfy himself/herself as to the hazards likely to arise from weather conditions. Complete weather records and reports may be obtained from any U.S. Weather Bureau Office.

(c) Transportation facilities: The Contractor shall make his/her own investigation of the conditions of existing public and private roads and of clearances, restrictions, bridge load limits and other limitations affecting transportation and ingress and egress at the job site. The unavailability of transportation facilities or limitations thereon shall not become a basis for claims against the Government or extension of time for completion of the work.

(End of clause)

252.236-7000 MODIFICATION PROPOSALS - PRICE BREAKDOWN. (DEC 1991)

(a) The Contractor shall furnish a price breakdown, itemized as required and within the time specified by the Contracting Officer, with any proposal for a contract modification.

(b) The price breakdown --

(1) Must include sufficient detail to permit an analysis of profit, and of all costs for --

(i) Material;

(ii) Labor;

(iii) Equipment;

(iv) Subcontracts; and

(v) Overhead; and

(2) Must cover all work involved in the modification, whether the work was deleted, added, or changed.

(c) The Contractor shall provide similar price breakdowns to support any amounts claimed for subcontracts.

(d) The Contractor's proposal shall include a justification for any time extension proposed.

(e) The Contractor shall provide final accounting and disposition recommendations of all Government property not consumed in performing this contract or delivered to the Government including salvage and scrap. The Government will review the Contractor's records and shall cause correction if the Government disagrees with the classification of items as salvage or scrap. The Contractor shall dispose of the items as directed by the Contracting Officer. Items designated as scrap (agreed to by the Contracting Officer) shall be retained by the Contractor; its disposition shall be the responsibility of the Contractor. See Specification Section 01505, paragraph entitled "Scrap Material". Items designated as salvageable items (agreed to by the Contracting Officer) shall be turned over to the Government.

52.0236-4901 PARTNERING (MAR 1992)

The Government intends to encourage the foundation of a cohesive partnership with the Contractor and its subcontractors. This partnership will be structured to draw on the strengths of each organization to identify and achieve reciprocal goals. The objectives are effective and efficient contract performance and intended to achieve completion within budget, on schedule, and in accordance with plans and specifications. This partnership would be bilateral in makeup, and participation will be totally voluntary. Any costs associated with effectuating this partnership will be agreed to by both parties and will be shared equally with no change in contract price. To implement this partnership initiative it is anticipated that within 60 days of Notice to Proceed the Contractor's on-site project manager and the Government's Resident Engineer would attend a one or two-day partnership development seminar/team building workshop together with the Contractor's key on-site staff and key Government personnel. Follow-up workshops of 1 or 2 days duration would be held periodically throughout the duration of the contract as agreed to by the Contractor and the Government.

52.236-4001 AS-BUILT DRAWINGS (PROGRESS PAYMENT) (OCT 1998)

One-half of one percent of construction award money shall be withheld until the final as-built drawings and CADD files are accepted by the Government.

SECTION TABLE OF CONTENTS

DIVISION 02 - SITE WORK

SECTION 02556A

GAS DISTRIBUTION SYSTEM

PART 1 GENERAL

- 1.1 LIQUIFIED PETROLEUM GAS (LPG)
- 1.2 REFERENCES
- 1.3 SUBMITTALS
- 1.4 GENERAL REQUIREMENTS
 - 1.4.1 Jointing Polyethylene Piping
 - 1.4.2 Standard Products
 - 1.4.3 Verification of Dimensions
 - 1.4.4 Handling

PART 2 PRODUCTS

- 2.1 PIPE, FITTINGS, AND ASSOCIATED MATERIALS
 - 2.1.1 Small Fittings
 - 2.1.2 Fittings, 2 Inches and Larger
 - 2.1.3 Polyethylene Pipe, Tubing, Fittings and Joints
 - 2.1.4 Gas Transition Fittings
- 2.2 VALVES
 - 2.2.1 Polyethylene Valves
- 2.3 PRESSURE REGULATORS
 - 2.3.1 Service Line Regulators
- 2.4 METERS

PART 3 EXECUTION

- 3.1 EXCAVATION AND BACKFILLING
- 3.2 SERVICE LINES
- 3.3 WORKMANSHIP AND DEFECTS
- 3.4 INSTALLATION
 - 3.4.1 Installing Pipe Underground
- 3.5 PIPE JOINTS
 - 3.5.1 Polyethylene Pipe Jointing Procedures
 - 3.5.2 Connections Between Metallic and Plastic Piping
- 3.6 VALVE BOXES
- 3.7 PRESSURE REGULATOR INSTALLATION
 - 3.7.1 Service Line Regulators
- 3.8 METER INSTALLATION
- 3.9 CONNECTIONS TO EXISTING LINES
 - 3.9.1 Connections to Publicly or Privately Operated Gas Utility Lines
 - 3.9.2 Connection to Government Owned/Operated Gas Lines
- 3.10 TESTS
 - 3.10.1 Destructive Tests of Plastic Pipe Joints
 - 3.10.2 Pressure and Leak Tests

-- End of Section Table of Contents --

SECTION 02556A

GAS DISTRIBUTION SYSTEM

PART 1 GENERAL

1.1 LIQUIFIED PETROLEUM GAS (LPG)

The existing gas distribution system along South Loop Road at Fort Irwin distributes Propane Gas at a pressure of of 12 to 14 pounds per square inch (PSI)

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

AMERICAN GAS ASSOCIATION (AGA)

AGA Manual (1994; addenda/correction Jan 1996) A.G.A.
Plastic Pipe Manual for Gas Service

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI B109.2 (2000) Diaphragm Type Gas Displacement
Meters (500 Cubic Feet per Hour Capacity
and Over)

AMERICAN PETROLEUM INSTITUTE (API)

API Spec 5L (2000) Line Pipe

API Spec 6D (1994; Supple 1 Jun 1996; Supple 2 Dec
1997) Pipeline Valves (Gate, Plug, Ball,
and Check Valves)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 53/A 53M (1999b) Pipe, Steel, Black and Hot-Dipped,
Zinc-Coated, Welded and Seamless

ASTM A 181/A 181M (2000) Carbon Steel Forgings, for
General-Purpose Piping

ASTM D 2513 (2000) Thermoplastic Gas Pressure Pipe,
Tubing, and Fittings

ASTM D 2517 (2000) Reinforced Epoxy Resin Gas Pressure
Pipe and Fittings

ASTM D 2683 (1998) Socket-Type Polyethylene Fittings
for Outside Diameter-Controlled
Polyethylene Pipe and Tubing

ASTM D 3261 (1997) Butt Heat Fusion Polyethylene (PE)
Plastic Fittings for Polyethylene (PE)
Plastic Pipe and Tubing

ASTM D 3308 (1997) PTFE Resin-Skived Tape

ASTM D 3350 (1999) Polyethylene Plastics Pipe and
Fittings Materials

ASME INTERNATIONAL (ASME)

ASME B1.20.1 (1983; R 1992) Pipe Threads, General
Purpose (Inch)

ASME B16.5 (1996; B16.5a) Pipe Flanges and Flanged
Fittings NPS 1/2 thru NPS 24

ASME B16.9 (1993) Factory-Made Wrought Steel
Buttwelding Fittings

ASME B16.11 (1996) Forged Fittings, Socket-Welding and
Threaded

ASME B16.21 (1992) Nonmetallic Flat Gaskets for Pipe
Flanges

ASME B16.34 (1997) Valves - Flanged, Threaded, and
Welding End

ASME B16.40 (1985; R 1994) Manually Operated
Thermoplastic Gas Shutoffs and Valves in
Gas Distribution Systems

ASME B31.8 (1995) Gas Transmission and Distribution
Piping Systems

ASME BPV VIII Div 1 (1998) Boiler and Pressure Vessel Code;
Section VIII, Pressure Vessels Division 1
- Basic Coverage

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

49 CFR 192 Transportation of Natural and Other Gas by
Pipeline: Minimum Federal Safety Standards

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-2962 (Rev A) Enamel, Alkyd (Metric)

FS TT-E-2784 (Rev A) Enamel (Acrylic-Emulsion, Exterior
Gloss and Semigloss) (Metric)

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS
INDUSTRY (MSS)

MSS SP-25 (1998) Standard Marking System for Valves,
Fittings, Flanges and Unions

NACE INTERNATIONAL (NACE)

NACE RP0185 (1996) Extruded, Polyolefin Resin Coating Systems with Soft Adhesives for Underground or Submerged Pipe

NACE RP0274 (1998) High Voltage Electrical Inspection of Pipeline Coatings Prior to Installation

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 58 Liquified Petroleum Gas Code

THE SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Paint 25 (1991) Red Iron Oxide, Zinc Oxide, Raw Linseed Oil and Alkyd Primer (Without Lead and Chromate Pigments)

SSPC SP 1 (1982) Solvent Cleaning

SSPC SP 3 (1995) Power Tool Cleaning

SSPC SP 6/NACE 3 (1994) Commercial Blast Cleaning

SSPC SP 7/NACE 4 (1994) Brush-Off Blast Cleaning

UNDERWRITERS LABORATORIES (UL)

UL Gas&Oil Dir (1999) Gas and Oil Equipment Directory

1.3 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government. The following shall be submitted in accordance with Section 01330 SUBMITTAL PROCEDURES:

~~SD-02 Shop Drawings~~

~~Pipe, Fittings, and Associated Materials; [____], [____]~~

~~Drawings shall contain complete schematic and piping diagrams and any other details required to demonstrate that the system has been coordinated and will properly function as a unit. Drawings shall show proposed layout and anchorage of the system and appurtenances, and equipment relationship to other parts of the work including clearances for maintenance and operation.~~

SD-03 Product Data

Materials and Equipment; [____], [____]

A complete list of equipment and materials, including manufacturer's descriptive and technical literature, performance charts and curves, catalog cuts, and installation instructions, including, but not limited to the following:

- ~~a. Dielectric Waterways and Flange Kits.~~
- b. Meters.
- c. Pressure Reducing Valves.
- d. Regulators.
- ~~e. [Earthquake Actuated Automatic Gas Shutoff System]~~
- ~~f. Emergency Gas Supply Connection.~~

~~Spare Parts Data; [____], [____]~~

~~Spare parts lists for each different item of material and equipment specified, after approval of the detail drawings and not later than [____] months prior to the date of beneficial occupancy. The data shall include a complete list of parts and supplies, with current unit prices and source of supply.~~

Connections to Existing Lines; [____], [____]

Notification of the Contractor's schedule for making connections to existing gas lines, at least 10 days in advance.

~~Welding Steel Piping; [____], [____]~~

~~A copy of qualified welding procedures along with a list of names and identification symbols of performance qualified welders and welding operators.~~

Jointing Polyethylene and Fiberglass Piping; G, [____]

A copy of qualified jointing procedures, training procedures, qualifications of trainer, and training test results for joiners and inspectors.

Connection and Abandonment Plan; G, [____]

A copy of procedures for gas line tie in, hot taps, abandonment/removal or demolition, purging, and plugging as applicable in accordance with ASME B31.8-NFPA 58

SD-06 Test Reports

Pressure and Leak Tests; G, [____]

Data from all pressure tests of the distribution system.

SD-07 Certificates

Utility Work; [____], [____]

Certification from the Operating Agency/Utility Company that work for which the Utility is responsible has been completed.

Training; [____], [____]

A copy of each inspector's and jointer's training certificate

with respective test results.

~~SD-10 Operation and Maintenance Data~~

~~Gas Distribution System; [____], [____]~~

~~—[Six] [____] copies, in booklet form and indexed, of site specific natural gas operation and maintenance manual for each gas distribution system including system operation, system maintenance, equipment operation, and equipment maintenance manuals described below. If operation and maintenance manuals are provided in a common volume, they shall be clearly differentiated and separately indexed.~~

~~—The System Operation Manual shall include but not be limited to the following:~~

~~——a. Maps showing piping layout and locations of all system valves and gas line markers.~~

~~——b. Step by step procedures required for system startup, operation, and shutdown. System components and equipment shall be indexed to the gas maps.~~

~~——c. Isolation procedures and valve operations to shut down or isolate each section of the system. Valves and other system components shall be indexed to the gas maps.~~

~~——d. Descriptions of Site Specific Standard Operation Procedures including permanent and temporary pipe repair procedures, system restart and test procedures for placing repaired lines back in service, and procedures for abandoning gas piping and system components.~~

~~——e. Descriptions of Emergency Procedures including: isolation procedures including required valve operations with valve locations indexed to gas map, recommended emergency equipment, checklist for major emergencies and procedures for reconnecting emergency gas supply.~~

~~—The Equipment Operation Manual shall include, but not be limited to, detail drawings, equipment data, and manufacturer supplied operation manuals for all equipment, valves and system components.~~

~~—The System Maintenance Manuals shall include, but not be limited to:~~

~~——a. Maintenance check list for entire gas distribution system.~~

~~——b. Descriptions of site specific standard maintenance procedures.~~

~~——c. Maintenance procedures for installed cathodic protection systems.~~

~~——d. Piping layout, equipment layout, and control diagrams of the systems as installed.~~

~~——e. Identification of pipe materials and manufacturer by~~

~~location, pipe repair procedures, and jointing procedures at transitions to other piping materials or piping from different manufacturer.~~

~~The Equipment Maintenance Manuals shall include but not be limited to the following:~~

~~a. Identification of valves and other equipment by materials, manufacturer, vendor identification and location.~~

~~b. Maintenance procedures and recommended maintenance tool kits for all valves and equipment.~~

~~c. Recommended repair methods, either field repair, factory repair, or whole item replacement for each valve component or piece of equipment or component item.~~

~~d. Routine maintenance procedures, possible breakdowns and repairs, and troubleshooting guide.~~

1.4 GENERAL REQUIREMENTS

~~1.3.1 Welding Steel Piping~~

~~Welding and nondestructive testing procedures for pressure piping are specified in Section 05093 WELDING PRESSURE PIPING. Structural members shall be welded in accordance with Section 05090 WELDING, STRUCTURAL.~~

1.4.1 Jointing Polyethylene and Fiberglass Piping

Piping shall be joined by performance qualified joiners using qualified procedures in accordance with AGA Manual. Manufacturer's prequalified joining procedures shall be used. Joints shall be inspected by an inspector qualified in the joining procedures being used and in accordance with AGA Manual. Joiners and inspectors shall be qualified at the jobsite by a person who has been trained and certified by the manufacturer of the pipe, to train and qualify joiners and inspectors in each joining procedure to be used on the job. Training shall include use of equipment, explanation of the procedure, and successfully making joints which pass tests specified in AGA Manual. The Contracting Officer shall be notified at least 24 hours in advance of the date to qualify joiners and inspectors.

1.4.2 Standard Products

Materials and equipment shall be the standard products of a manufacturer regularly engaged in the manufacture of the products and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening. Asbestos or products containing asbestos shall not be used. Equipment shall be supported by a service organization that is, in the opinion of the Contracting Officer, reasonably convenient to the site. Valves, flanges, and fittings shall be marked in accordance with MSS SP-25.

1.4.3 Verification of Dimensions

The Contractor shall become familiar with all details of the work, verify all dimensions in the field, and shall advise the Contracting Officer of any discrepancy before performing the work.

1.4.4 Handling

Pipe and components shall be handled carefully to ensure a sound, undamaged condition. Particular care shall be taken not to damage pipe coating. No pipe or material of any kind shall be placed inside another pipe or fitting after the coating has been applied, except as specified in paragraph INSTALLATION. Plastic pipe shall be handled in conformance with AGA Manual.

PART 2 PRODUCTS

2.1 PIPE, FITTINGS, AND ASSOCIATED MATERIALS

~~2.1.1 Steel Pipe~~

~~Steel pipe shall conform to ASTM A 53/A 53M, Grade A or B, Type E or S, Schedule 40; or API Spec 5L seamless or electric resistance welded, Schedule 40, black steel pipe as specified in ASME B31.8. Furnace butt welded pipe may be used in sizes 1 1/2 inches and smaller.~~

2.1.1 Small Fittings

Fittings 1-1/2 inches and smaller shall conform to ASME B16.11.

2.1.2 Fittings, 2 Inches and Larger

~~Pipe flanges and flanged fittings including bolts, nuts, and bolt patterns shall be in accordance with ASME B16.5, Class [_____].~~ Buttweld fittings shall be in accordance with ASME B16.9. Weld neck flanges shall be used.

~~2.1.4 Steel Forged Branch Connections~~

~~Connections shall conform to ASTM A 181/A 181M, Class 60, carbon steel.~~

~~2.1.5 Flange Gaskets~~

~~Gaskets shall be non asbestos compressed material in accordance with ASME B16.21, 1/16 inch minimum thickness, full face or self centering flat ring type. The gaskets shall contain aramid fibers bonded with nitrile butadiene rubber (NBR), or glass fibers bonded with polytetrafluoroethylene, suitable for maximum 600 degrees F service and meeting applicable requirements of ASME B31.8.~~

~~2.1.6 Pipe Threads~~

~~Pipe threads shall conform to ASME B1.20.1.~~

2.1.3 Polyethylene Pipe, Tubing, Fittings and Joints

Polyethylene pipe, tubing, fittings and joints shall conform to ASTM D 3350 and ASTM D 2513, pipe designations PE 2406 and PE 3408, rated SDR {_____}11 or less, as specified in ~~ASME B31.8~~ NFPA 58. Pipe sections shall be marked as required by ASTM D 2513. Butt fittings shall conform to ASTM D 3261 and socket fittings shall conform to ASTM D 2683. Fittings shall match the service rating of the pipe. Pipe shall be designated for use wit LPG Propane. ~~Minimum wall thickness shall be [_____].~~

~~2.1.8 Fiberglass Pipe, Fittings and Adhesive~~

~~Fiberglass pipe, fittings and adhesive shall conform to ASTM D 2517. Pipe~~

~~sections shall be marked as required by ASTM D 2517. Minimum wall thickness shall be [_____].~~

~~2.1.9 Sealants for Steel Pipe Threaded Joints~~

~~2.1.9.1 Sealing Compound~~

~~Joint sealing compound shall be as listed in UL Gas&Oil Dir, Class 20 or less.~~

~~2.1.9.2 Tape~~

~~Polytetrafluoroethylene tape shall conform to ASTM D 3308.~~

~~2.1.10 Identification~~

~~Pipe flow markings and metal tags for each valve, meter, and regulator shall be provided as required by the Contracting Officer.~~

~~2.1.11 Insulating Joint Materials~~

~~Insulating joint materials shall be provided between flanged or threaded metallic pipe systems where shown to isolate galvanic or electrolytic action.~~

~~2.1.11.1 Threaded Joints~~

~~Joints for threaded pipe shall be steel body nut type, dielectric waterways with insulating gaskets.~~

~~2.1.11.2 Flanged Joints~~

~~Joints for flanged pipe shall consist of full face sandwich type flange insulating gasket of the dielectric type, insulating sleeves for flange bolts and insulating washers for flange nuts.~~

~~2.1.11.3 Dielectric Waterways and Flanges~~

~~Dielectric waterways shall have temperature and pressure rating equal to or greater than that specified for the connecting piping. Waterways shall have metal connections on both ends suited to match connecting piping. Dielectric waterways shall be internally lined with an insulator specifically designed to prevent current flow between dissimilar metals. Dielectric flanges shall meet the performance requirements described herein for dielectric waterways.~~

2.1.4 Gas Transition Fittings

Gas transition fittings shall be manufactured steel fittings approved for jointing steel and polyethylene or fiberglass pipe. Approved transition fittings are those that conform to AGA Manual requirements for transition fittings.

2.2 VALVES

Valves shall be suitable for shutoff or isolation service and shall conform to the following:

~~2.2.1 Steel Valves~~

~~Steel valves 1 1/2 inches and smaller installed underground shall conform to ASME B16.34, carbon steel, socket weld ends, with square wrench operator adaptor. Steel valves 1 1/2 inches and smaller installed aboveground shall conform to ASME B16.34, carbon steel, socket weld or threaded ends with handwheel or wrench operator. Steel valves 2 inches and larger installed underground shall conform to API Spec 6D, carbon steel, butt weld ends, Class [] with square wrench operator adaptor. Steel valves 2 inches and larger installed aboveground shall conform to API Spec 6D, carbon steel, butt weld or flanged ends, Class [] with handwheel or wrench operator.~~

~~2.2.2 Steel Valve Operators~~

~~Valves 8 inches and larger shall be provided with worm or spur gear operators, totally enclosed, grease packed, and sealed. The operators shall have Open and Closed stops and position indicators. Locking feature shall be provided where indicated. Wherever the lubricant connections are not conveniently accessible, suitable extensions for the application of lubricant shall be provided. Valves shall be provided with lubricant compatible with gas service.~~

2.2.1 Polyethylene Valves

Polyethylene valves shall conform to ASME B16.40. Polyethylene valves, in sizes 1/2 inch to 6 inches, may be used with polyethylene distribution and service lines, in lieu of steel valves, for underground installation only.

2.3 PRESSURE REGULATORS

Regulators shall have ferrous bodies, shall provide backflow and vacuum protection, and shall be designed to meet the pressure, load and other service conditions.

~~2.3.1 Gas Main Regulators~~

~~Pressure regulators for main distribution lines, supplied from a source of gas which is at a higher pressure than the maximum allowable operating pressure for the system, and shall be equipped with pressure regulating devices of adequate capacity. In addition to the pressure regulating devices, a suitable method shall be provided to prevent overpressuring of the system in accordance with ASME B31.8. Suitable protective devices are as follows:~~

~~—— a. Spring loaded relief valve meeting the provisions of ASME BPV VIII Div 1.~~

~~—— b. Pilot loaded back pressure regulator used as relief valve, so designed that failure of the pilot system will cause the regulator to open.~~

~~—— c. Weight loaded relief valves.~~

~~—— d. Monitoring regulator installed in series with the primary pressure regulator.~~

~~—— e. Series regulator installed upstream from the primary regulator, set to limit the pressure on the inlet of the primary regulator continuously to the maximum allowable operating pressure of the system, or less.~~

~~f. Automatic shutoff device installed in series with the primary regulator, set to shut off when the pressure on the distribution system reaches the maximum allowable operating pressure of the system, or less. This device shall remain closed until manually reset.~~

~~g. Spring loaded, diaphragm type relief valves.~~

2.3.1 Service Line Regulators

Pressure regulators for individual service lines shall have ferrous bodies.

Regulator shall be capable of reducing distribution line pressure to pressures required for users. Regulators shall be provided where gas will be distributed at pressures in excess of 10 inches of water column. Pressure relief shall be set at a lower pressure than would cause unsafe operation of any connected user. Regulators for liquified petroleum gas shall be adjusted to 10 to 12 inches of water column. Pressure relief for liquified petroleum gas shall be set at 16 inches of water column. Regulator shall have single port with orifice diameter no greater than that recommended by the manufacturer for the maximum gas pressure at the regulator inlet. Regulator valve vent shall be of resilient materials designed to withstand flow conditions when pressed against the valve port. Regulator shall be capable of regulating downstream pressure within limits of accuracy and shall be capable of limiting the buildup of pressure under no-flow conditions to 50 percent or less of the discharge pressure maintained under flow conditions. Regulator shall have a self contained service regulator. Regulator pipe connections shall not exceed 2 inch size.

2.4 METERS

Meters shall conform to ANSI B109.2. Meters shall be ~~{pipe}~~ ~~{pedestal}~~ mounted ~~{and be provided with a strainer immediately upstream}~~. ~~{Meters shall be provided with {over pressure protection as specified in ASME B31.8} {tamper proof protection} {frost protection} {fungus proof protection}.}~~ Meters shall be suitable for accurately measuring and handling gas at pressures, temperatures, and flow rates indicated. Meters shall have a pulse switch initiator capable of operating up to speeds of 500 pulses per minute with no false pulses and shall require no field adjustments. Initiators shall provide the maximum number of pulses up to 500 per minute that is obtainable from the manufacturer. It shall provide not less than one pulse per 100 cubic feet of gas.

2.5 ~~EARTHQUAKE ACTUATED AUTOMATIC GAS SHUTOFF SYSTEM~~

~~Earthquake Actuated Automatic Gas Shutoff devices shall conform to {_____} {and} {requirements furnished by the Contracting Officer}, and shall be listed by the State of California, Division of the State Architect as being tested and in conformance with specified requirements. The system shall safely interrupt the flow of gas to the building due to strong ground shaking of an earthquake.~~

2.6 ~~EMERGENCY GAS SUPPLY CONNECTION~~

~~The emergency gas supply connection shall consist of piping (same size as service line) and accessories that will enable a portable, commercial sized gas cylinder system to be connected to the gas piping system. This connection shall be capped to prevent gas leakage with a lockable manual valve located to be capable of shutting off flow. The entire assembly should be contained in a weatherproof, lockable box. The box shall contain~~

~~permanently installed written instructions stating the type and pressure of the gas allowed to be connected to the line. The instructions shall also indicate and provide specific instruction for testing of the integrity of the building's gas system with an inert gas before the fuel gas connection is made. A subplate shall be provided in the box that is required to be unbolted to gain access to the connection. The subplate shall contain a warning regarding the potential consequences of using gas other than that specified or of failing to test system integrity before hooking up emergency fuel supply.~~

~~2.7 PROTECTIVE COVERING MATERIALS~~

~~Continuously extruded polyethylene and adhesive coating system materials shall conform to NACE RP0185, Type A.~~

~~2.8 TELEMETERING OR RECORDING GAUGES~~

~~Each distribution system supplied by more than one district pressure regulating station shall be equipped with telemetering or recording pressure gauges to indicate the gas pressure in the district line.~~

PART 3 EXECUTION

3.1 EXCAVATION AND BACKFILLING

Earthwork shall be as specified in Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITIES SYSTEMS.

~~3.2 GAS MAINS~~

~~Pipe for gas mains shall be [steel] [polyethylene] [or] [fiberglass]. [Steel pipe and fittings shall be coated with protective covering as specified.] [Polyethylene or fiberglass mains shall not be installed aboveground.]~~

3.2 SERVICE LINES ~~AND EMERGENCY GAS SUPPLY CONNECTION~~

Service lines shall be constructed of ~~materials specified for gas mains~~ polyethylene and shall extend from a gas main to and including the point of delivery within 5 feet of the building. The point of delivery is the ~~[meter set assembly] [service regulator] [shutoff valve]~~. The service lines shall be connected to the gas mains ~~[as indicated] [through service tees, with end of run plugged]~~. ~~Where indicated, a~~ Service line shall be provided with an isolation valve of the same size as the service line. The service lines shall be as short and as straight as practicable between the point of delivery and the gas main and shall not be bent or curved laterally unless necessary to avoid obstructions or otherwise permitted. Service lines shall be laid with as few joints as practicable using standard lengths of pipe. Shorter lengths shall be used only for closures. Polyethylene ~~or fiberglass~~ service lines shall not be installed aboveground except as permitted in ~~ASME B31.8~~ NFPA 58.

~~3.3.1 Emergency Gas Supply Connection~~

~~An aboveground locked, valved and capped emergency gas supply connection shall be provided [downstream] [upstream] of the pressure regulator. The connection shall be located outside of the building within 12 inches of the exterior wall and installed in a weatherproof box which is mounted on the exterior wall and clearly marked with an appropriate metal sign mounted~~

~~on wall above.~~

3.3 WORKMANSHIP AND DEFECTS

Pipe, tubing, and fittings shall be clear and free of cutting burrs and defects in structure or threading and shall be thoroughly brushed and blown free of chips and scale. Defective pipe, tubing, or fittings shall be replaced and shall not be repaired.

~~3.5 PROTECTIVE COVERING~~

~~3.5.1 Protective Covering for Underground Steel Pipe~~

~~Except as otherwise specified, protective coverings shall be applied mechanically in a factory or field plant especially equipped for the purpose. Valves and fittings that cannot be coated and wrapped mechanically shall have the protective covering applied by hand, preferably at the plant that applies the covering to the pipe. Joints shall be coated and wrapped by hand. Hand coating and wrapping shall be done in a manner and with materials that will produce a covering equal in thickness to that of the covering applied mechanically.~~

~~3.5.1.1 Thermoplastic Resin Coating System~~

~~The coating system shall conform to NACE RP0185, Type A. The exterior of the pipe shall be cleaned to a commercial grade blast cleaning finish in accordance with SSPC SP 6/NACE 3. Adhesive compound shall be applied to the pipe. Immediately after the adhesive is applied, a seamless tube of polyethylene shall be extruded over the adhesive to produce a bonded seamless coating. The nominal thickness of the pipe coating system shall be 10 mils (plus or minus 10 percent) of adhesive and 40 mils (plus or minus 10 percent) of polyethylene for pipes up to 16 inches in diameter. For pipes 18 inches and larger in diameter, the pipe coating system thickness shall be 10 mils (plus or minus 10 percent) adhesive and 60 mils (plus or minus 10 percent) polyethylene. Joint coating and field repair material shall be applied as recommended by the coating manufacturer and shall be one of the following:~~

- ~~—— a. Heat shrinkable polyethylene sleeves.~~
- ~~—— b. Polyvinyl chloride pressure sensitive adhesive tape.~~
- ~~—— c. High density polyethylene/bituminous rubber compound tape.~~

~~The coating system shall be inspected for holes, voids, cracks, and other damage during installation.~~

~~3.5.1.2 Inspection of Pipe Coatings~~

~~Any damage to the protective covering during transit and handling shall be repaired before installation. After field coating and wrapping has been applied, the entire pipe shall be inspected by an electric holiday detector with impressed current set at a value in accordance with NACE RP0274 using a full ring, spring type coil electrode. The holiday detector shall be equipped with a bell, buzzer, or other type of audible signal which sounds when a holiday is detected. All holidays in the protective covering shall be repaired immediately upon detection. The Contracting Officer reserves the right to inspect and determine the suitability of the detector. Labor, materials, and equipment necessary for conducting the inspection shall be~~

~~furnished by the Contractor.~~

~~3.5.2 Protective Covering for Aboveground Piping Systems~~

~~Finish painting shall conform to the applicable paragraphs of Section 09900-PAINTING, GENERAL and as follows:~~

~~3.5.2.1 Ferrous Surfaces~~

~~Shop primed surfaces shall be touched up with ferrous metal primer same type paint as the shop primer. Surfaces that have not been shop primed shall be solvent cleaned in accordance with SSPC SP 1. Surfaces that contain loose rust, loose mill scale, and other foreign substances shall be mechanically cleaned by power wire brushing in accordance with SSPC SP 3 or brush off blast cleaned in accordance with SSPC SP 7/NACE 4 and primed with ferrous metal primer in accordance with SSPC Paint 25. Primed surfaces shall be finished with two coats of exterior alkyd paint conforming to CID-A A 2962 Type I, Class [A] [B], Grade B.~~

~~3.5.2.2 Nonferrous Surfaces~~

~~[Nonferrous surfaces shall not be painted.] [Nonferrous surfaces shall be painted due to corrosive conditions. The surfaces shall be solvent cleaned in accordance with SSPC SP 1. A first coat of FS TT E 2784, Type III, Flat, and 2 coats of FS TT E 2784, Enamel [Type I, Gloss] [or] [Type II, Semigloss] shall be applied.]~~

~~3.5.3 Protective Covering for Piping in Valve Boxes and Manholes~~

~~Piping in valve boxes or manholes shall receive protective coating as specified for underground steel pipe.~~

3.4 INSTALLATION

Gas distribution system and equipment shall be installed in conformance with the manufacturer's recommendations and applicable sections of ~~ASME B31.8~~NFPA 58, AGA Manual and 49 CFR 192. Abandoning existing gas piping shall be done in accordance with ~~ASME B31.8~~NFPA 58. Pipe shall be cut without damaging the pipe. Unless otherwise authorized, cutting shall be done by an approved type of mechanical cutter. Wheel cutters shall be used where practicable. On steel pipe 6 inches and larger, an approved gas-cutting-and-beveling machine may be used. Cutting of plastic pipe shall be in accordance with AGA Manual. Valve installation in plastic pipe shall be designed to protect the plastic pipe against excessive torsional or shearing loads when the valve is operated and from other stresses which may be exerted through the valve or valve box.

3.4.1 Installing Pipe Underground

~~Gas mains and s~~Service lines shall be graded as placed where indicated. Joints in steel pipe shall be welded except as otherwise permitted for installation of valves. Mains shall have 24 inch minimum cover; sService lines shall have 18~~24~~inch minimum cover; and both mains and service lines shall be placed on firmly compacted select material for the full length. Where indicated, the main~~service line~~ shall be encased, bridged, or designed to withstand any anticipated external loads as specified in ASME B31.8NFPA 58. The encasement material shall be standard weight black steel pipe with a protective coating as specified. The pipe shall be separated from the casing by insulating spacers and sealed at the ends with casing

bushings. Trench shall be excavated below pipe grade, bedded with bank sand, and compacted to provide full-length bearing. Laying the pipe on blocks to produce uniform grade will not be permitted. The pipe shall be clean inside before it is lowered into the trench and shall be kept free of water, soil, and all other foreign matter that might damage or obstruct the operation of the valves, regulators, meters, or other equipment. When work is not in progress, open ends of pipe or fittings shall be securely closed by expandable plugs or other suitable means. Minor changes in line or gradient of pipe that can be accomplished through the natural flexibility of the pipe material without producing permanent deformation and without overstressing joints may be made when approved. Changes in line or gradient that exceed the limitations specified shall be made with fittings.

When cathodic protection is furnished, electrically insulated joints or flanges shall be provided. When polyethylene or fiberglass piping is installed underground, foil backed magnetic tape shall be placed above the pipe to permit locating with a magnetic detector. After laying of pipe and testing, trench shall be backfilled in accordance with Section 02316 EXCAVATION, TRENCHING, AND BACKFILLING FOR UTILITY SYSTEMS.

~~3.6.2 Installing Pipe Aboveground~~

~~Aboveground piping shall be protected against dirt and other foreign matter as specified for underground piping. Joints in steel pipe shall be welded; however, joints in pipe 1 1/2 inches in diameter and smaller may be threaded; joints may also be threaded to accommodate the installation of valves. Flanges shall be of the weld neck type to match wall thickness of pipe.~~

3.5 PIPE JOINTS

Pipe joints shall be designed and installed to effectively sustain the longitudinal pullout forces caused by the contraction of piping or superimposed loads.

~~3.7.1 Threaded Steel Joints~~

~~Threaded joints in steel pipe shall have tapered threads evenly cut and shall be made with UL approved graphite joint sealing compound for gas service or polytetrafluoroethylene tape applied to the male threads only. Caulking of threaded joints to stop or prevent leaks will not be permitted.~~

~~3.7.2 Welded Steel Joints~~

~~Gas pipe weldments shall be as indicated. Changes in direction of piping shall be made with welding fittings only; mitering or notching pipe to form elbows and tees or other similar type construction will not be permitted. Branch connection may be made with either welding tees or forged branch outlet fittings. Branch outlet fittings shall be forged, flared for improvement of flow where attached to the run, and reinforced against external strains. Beveling, alignment, heat treatment, and inspection of weld shall conform to ASME B31.8. Weld defects shall be removed and repairs made to the weld, or the weld joints shall be entirely removed and rewelded. After filler metal has been removed from its original package, it shall be protected or stored so that its characteristics or welding properties are not affected adversely. Electrodes that have been wetted or have lost any of their coating shall not be used.~~

3.5.1 Polyethylene and Fiberglass Pipe Jointing Procedures

Jointing procedures shall conform to AGA Manual. Indiscriminate heat fusion joining of plastic pipe or fittings made from different polyethylene resins by classification or by manufacturer shall be avoided if other alternative joining procedures are available. If heat fusion joining of dissimilar polyethylenes is required, special procedures are required. The method of heat fusion joining dissimilar polyethylene resins shall be tested in accordance with paragraph TESTS, subparagraph Destructive Tests of Plastic Pipe Joints.

3.5.2 Connections Between Metallic and Plastic Piping

Connections shall be made only outside, underground, and with approved transition fittings.

3.6 VALVE BOXES

Valve boxes of cast iron not less than 3/16 inch thick shall be installed at each underground valve except where concrete or other type of housing is indicated. Valve boxes shall be provided with locking covers that require a special wrench for removal. Wrench shall be furnished for each box. The word "gas" shall be cast in the box cover. When the valve is located in a roadway, the valve box shall be protected by a suitable concrete slab at least 3 square feet. When in a sidewalk, the top of the box shall be in a concrete slab 2 feet square and set flush with the sidewalk. Boxes shall be adjustable extension type with screw or slide-type adjustments. Valve boxes shall be separately supported, not resting on the pipe, so that no traffic loads can be transmitted to the pipe. Valves shall only be located in valve boxes or inside of buildings.

~~3.9 DRIPS~~

~~Drips shall be installed at locations where indicated. Drips shall conform to the details shown or may be commercial units of approved type and capacity. A blow off pipe 1 1/4 inches or larger shall be connected to each drip at its lowest point and shall extend to or near the ground surface at a convenient location away from traffic. Discharge for each drip terminal (outlet) shall be provided with a reducing fitting, a plug valve, and a 1/2 inch nipple turned down. The discharge terminal (outlet) shall be inside a length of 12 inches or larger vitrified clay pipe, concrete sewer pipe or concrete terminal box [set vertically on a bed of coarse gravel 1 foot thick and 3 feet square,] [with concrete bottom to contain liquids and a connection to remove liquids for disposal,] and closed at the ground surface with a suitable replacement cover.~~

3.7 PRESSURE REGULATOR INSTALLATION

~~3.10.1 Main Distribution Line Regulators~~

~~Pressure regulators shall be installed where shown. A valve shall be installed on each side of the regulator for isolating the regulator for maintenance. A bypass line with bypass valves or 3 way valves and an overpressurization pressure regulating device shall be provided. Regulators and valves shall be installed in rectangular reinforced concrete boxes. Boxes shall be large enough so that all required equipment can be properly installed, operated, and maintained. Sidewalls shall extend above ground line. The boxes shall be provided with [steel door] [cast iron manhole] covers with locking provisions and 4 inch diameter vents. One key or other unlocking device shall be furnished with each cover. Discharge stacks, vents, or outlet ports of all pressure relief devices~~

~~shall be located where gas can be discharged into the atmosphere without undue hazard. Stacks and vents shall be provided with fittings to preclude entry of water.~~

3.7.1 Service Line Regulators

A shutoff valve, meter set assembly, and service regulator shall be installed on the service line outside the building, 18 inches above the ground on the riser. An insulating joint shall be installed on the inlet side of the meter set assembly and service regulator and shall be constructed to prevent flow of electrical current. A 3/8 inch tapped fitting equipped with a plug shall be provided on both sides of the service regulator for installation of pressure gauges for adjusting the regulator. All service regulator vents and relief vents shall terminate in the outside air in rain and insect resistant fittings. The open end of the vent shall be located where gas can escape freely into the atmosphere, away from any openings into the building and above areas subject to flooding.

3.8 METER INSTALLATION

Meters shall be installed in accordance with ~~ASME B31.8~~ NFPA 58. Permanent gas meters shall be installed with provisions for isolation and removal for calibration and maintenance, and shall be suitable for operation in conjunction with an energy monitoring and control system.

3.9 CONNECTIONS TO EXISTING LINES

Connections between new work and existing gas lines, where required, shall be made in accordance with ~~ASME B31.8~~ NFPA 58, using proper fittings to suit the actual conditions. When connections are made by tapping into a gas main, the connecting fittings shall be the same size as the pipe being connected.

3.9.1 Connections to Publicly or Privately Operated Gas Utility Lines

Contractor shall provide materials for the connections to the existing gas lines. Final connections and the turning on of gas shall be made by the utility. Existing lines that are to be abandoned or taken out of service shall be disconnected, purged and capped, plugged or otherwise effectively sealed by the Utility. The Contractor shall notify the Contracting Officer, in writing, 10 days before final connections and turning on of gas lines. The Contractor shall make necessary arrangements with the Utility for tie in and activation of new gas lines. Only the Operating Agency/Utility Company may reactivate the system after tie in. The Contractor shall furnish a certification by the Operating Agency/Utility Company that all Utility work has been satisfactorily completed.

3.9.2 Connection to Government Owned/Operated Gas Lines

The Contractor shall provide connections to the existing gas lines in accordance with approved procedures. Deactivation of any portion of the existing system shall only be done at the valve location shown on the drawings. Reactivation of any existing gas lines will only be done by the Government. The Contractor's Connection and Abandonment Plan shall be submitted and approved prior to making any connections to existing gas lines. This plan shall include the Operating Agency's required procedures which may be obtained from Contracting Officer. The Contractor shall notify the Contracting Officer, in writing, 10 days before connections to existing lines are to be made.

a. If facilities are abandoned in place, they shall be physically disconnected from the piping system. The open ends of all abandoned facilities shall be purged, capped, plugged or otherwise effectively sealed. Abandonment shall not be completed until it has been determined that the volume of gas or liquid hydrocarbons contained within the abandoned section poses no potential hazard. Air or inert gas may be used for purging, or the facility may be filled with water or other inert material. If air is used for purging, the Contractor shall ensure that a combustible mixture is not present after purging.

b. When a main is abandoned, together with the service lines connected to it, only the customer's end of such service lines is required to be sealed as stipulated above.

c. Service lines abandoned from the active mains shall be disconnected as close to the main as practicable.

d. All valves left in the abandoned segment shall be closed.

e. All abovegrade valves, risers, and vault and valve box covers shall be removed. Vault and valve box voids shall be filled with suitable compacted backfill material.

~~3.13 CATHODIC PROTECTION~~

~~Cathodic protection shall be provided for all metallic gas piping installed underground and shall be installed as specified in [Section 13110 CATHODIC PROTECTION SYSTEM (SACRIFICIAL ANODE)] [Section 13112 CATHODIC PROTECTION SYSTEM (IMPRESSED CURRENT)].~~

3.10 TESTS

3.10.1 Destructive Tests of Plastic Pipe Joints

Each day, prior to making polyethylene heat fusion joints or fiberglass adhesive joints, a joint of each size and type to be installed that day shall be made by each person performing joining of plastic pipe that day and destructively tested. At least 3 longitudinal straps shall be cut from each joint. Each strap shall be visually examined, shall not contain voids or discontinuities on the cut surfaces of the joint area, and shall be deformed by bending, torque, or impact, and if failure occurs, it must not initiate in the joint area. If a joint fails the visual or deformation test, the qualified joiner who made that joint shall not make further field joints in plastic pipe on this job until that person has been retrained and requalified. The results of the destructive tests shall be recorded to include the date and time of the tests, size and type of the joints, ambient conditions, fusion iron temperature and names of inspectors and joiners.

3.10.2 Pressure and Leak Tests

The system of gas mains and service lines shall be tested after construction and before being placed in service using air as the test medium. The normal operating pressure for the system is 12-14 psi~~{_____}~~. ~~The test pressure is {_____}~~. Prior to testing the system, the interior shall be blown out, cleaned and cleared of all foreign materials. All meters, regulators, and controls shall be removed before blowing out and cleaning and reinstalled after clearing of all foreign materials. Testing

of gas mains and service lines shall be done with due regard for the safety of employees and the public during the test. Persons not working on the test operations shall be kept out of the testing area while testing is proceeding. The test shall be made on the system as a whole or on sections that can be isolated. Joints in sections shall be tested prior to backfilling when trenches must be backfilled before the completion of other pipeline sections. The test shall continue for at least 24 hours from the time of the initial readings to the final readings of pressure and temperature. The initial test readings of the instrument shall not be made for at least 1 hour after the pipe has been subjected to the full test pressure, and neither the initial nor final readings shall be made at times of rapid changes in atmospheric conditions. The temperatures shall be representative of the actual trench conditions. There shall be no indication of reduction of pressure during the test after corrections have been made for changes in atmospheric conditions in conformity with the relationship $T(1)P(2)=T(2)P(1)$, in which T and P denote absolute temperature and pressure, respectively, and the numbers denote initial and final readings. During the test, the entire system shall be completely isolated from all compressors and other sources of air pressure. Each joint shall be tested by means of soap and water or an equivalent nonflammable solution prior to backfilling or concealing any work. The testing instruments shall be approved by the Contracting Officer. All labor, materials and equipment for conducting the tests shall be furnished by the Contractor and shall be subject to inspection at all times during the tests. The Contractor shall maintain safety precautions for air pressure testing at all times during the tests.

-- End of Section --

indicated on the drawings including locating sprinklers, piping and equipment, and size piping and equipment when this information is not indicated on the drawings or is not specified herein. The design of the sprinkler system shall be based on hydraulic calculations, and the other provisions specified herein.

1.2.1 Hydraulic Design

The minimum pipe size for branch lines in gridded systems shall be 1-1/4 inch. Hydraulic calculations shall be in accordance with the Area/Density Method of NFPA 13. Water velocity in the piping shall not exceed 20 ft/s.

1.2.1.1 Hose Demand

An allowance for exterior hose streams of shall be indicated on the drawings.

1.2.1.2 Basis for Calculations

Hydraulic calculations shall be based upon the Hazen-Williams formula with a "C" value of 120 for steel piping, 150 for copper tubing, 140 for new cement-lined ductile-iron piping, and 100] for existing underground piping. ~~Hydraulic calculations shall be based on operation of the fire pump(s) provided in Section 13920 FIRE PUMPS~~

1.2.2 Sprinkler Spacing

Sprinklers shall be uniformly spaced on branch lines. Maximum spacing per sprinkler shall not exceed limits specified in NFPA 13 for hazard occupancy.

1.3 COORDINATION OF TRADES

Piping offsets, fittings, and any other accessories required shall be furnished as required to provide a complete installation and to eliminate interference with other construction. Sprinkler shall be installed over and under ducts, piping and platforms when such equipment can negatively effect or disrupt the sprinkler discharge pattern and coverage.

1.4 DELIVERY AND STORAGE

All equipment delivered and placed in storage shall be housed in a manner to preclude any damage from the weather, humidity and temperature variations, dirt and dust, or other contaminants. Additionally, all pipes shall either be capped or plugged until installed.

1.5 FIELD MEASUREMENTS

The Contractor shall become familiar with all details of the work, verify all dimensions in the field, and shall advise the Contracting Officer of any discrepancy before performing the work.

1.6 SUBMITTALS

specified in the Contract documents, and shall have served in a similar capacity for at least three systems that have performed in the manner intended for a period of not less than 6 months.

1.9 SPRINKLER SYSTEM INSTALLER QUALIFICATIONS

Work specified in this section shall be performed by the Sprinkler System Installer. The Sprinkler System Installer shall be regularly engaged in the installation of the type and complexity of system specified in the Contract documents, and shall have served in a similar capacity for at least three systems that have performed in the manner intended for a period of not less than 6 months.

1.10 REGULATORY REQUIREMENTS

Compliance with referenced NFPA standards is mandatory. This includes advisory provisions listed in the appendices of such standards, as though the word "shall" had been substituted for the word "should" wherever it appears. In the event of a conflict between specific provisions of this specification and applicable NFPA standards, this specification shall govern. Reference to "authority having jurisdiction" shall be interpreted to mean the Contracting Officer.

PART 2 PRODUCTS

2.1 STANDARD PRODUCTS

Materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacture of such products and shall essentially duplicate items that have been in satisfactory use for at least 2 years prior to bid opening.

2.2 NAMEPLATES

All equipment shall have a nameplate that identifies the manufacturer's name, address, type or style, model or serial number, and catalog number.

2.3 REQUIREMENTS FOR FIRE PROTECTION SERVICE

Materials and Equipment shall have been tested by Underwriters Laboratories, Inc. and listed in UL Fire Prot Dir or approved by Factory Mutual and listed in FM P7825a and FM P7825b. Where the terms "listed" or "approved" appear in this specification, such shall mean listed in UL Fire Prot Dir or FM P7825a and FM P7825b

2.4 UNDERGROUND PIPING COMPONENTS

2.4.1 Pipe

Piping from a point 6 inches above the floor to [a point 5 feet outside the building wall] ~~{the point of connection to the existing water mains}~~ shall be ductile iron with a rated working pressure of 175 psi conforming to AWWA C151, with cement mortar lining conforming to AWWA C104. Piping more than 5 feet outside the building walls shall comply with Section 02510 WATER DISTRIBUTION SYSTEM.

TABLE II
PIPE AND FITTING MATERIALS FOR PRESSURE PIPING SYSTEMS

Item No.	Pipe and Fitting Materials	SERVICE			
		A	B	C	D
	cement, ASTM D 2672				
31	Filament-wound reinforced thermosetting resin (RTRP) pipe, ASTM D 2996	X	X		
32	Steel pipeline flanges, MSS SP-44	X	X		
33	Fittings: brass or bronze; ASME B16.15, and ASME B16.18 ASTM B 828	X	X		
34	Carbon steel pipe unions, socket-welding and threaded, MSS SP-83	X	X	X	
35	Malleable-iron threaded pipe unions ASME B16.39	X	X		
36	Nipples, pipe threaded ASTM A 733	X	X	X	
37	Crosslinked Polyethylene (PEX) Plastic Pipe ASTM F 877.	X			X
38	316 Stainless Steel, Seamless, Fully Annealed 0.220" wall thickness, ASTM A269 Working pressure 1500 <u>9800</u> psi				E
39	Annealed seamless steel tubing 0.049 wall thickness ASTM A179 Working pressure 1500 psi				F
40	316 stainless steel, medium pressure coned-and-threaded fitting, working pressure 10,000 psi min				E
41	Flared hydraulic tube fitting Mil Spec-Mil-F18866, working pressure 1500 psi min A - Cold Water Aboveground B - Hot Water 180 degrees F Maximum Aboveground C - Compressed Air Lubricated D - Cold Water Service Belowground E - Grease				F

tests by an AMCA approved laboratory.

2.10.1.2 Retarding Agent

An ultraviolet retarding agent such as additives, gel coatings or other manufacturer approved equivalents shall be part of or applied on exterior nonmetallic components susceptible to ultraviolet degradation from sun rays and shall conform to UL 746C.

2.10.2 Evaporative Media

2.10.2.1 Evaporative and Eliminator Media for Units

Media shall be fabricated of ~~bonded synthetic fiber or glass~~ cellulose fiber fiber. Media shall conform to UL 900 Class II. Media shall be of the type specifically manufactured for use with evaporative coolers. Nonferrous metal media shall be constructed of corrosion and fungus resistant material not susceptible to decomposition by fungal or bacterial action. Media shall be securely mounted in a galvanized steel, stainless steel, or polymeric material frame. Louvers shall be positioned in such manner that the water will not run on the outside surface. Nonrigid filter media shall be held in frame by a rigid retainer grid, a 1/4 inch wire mesh or fabric netting.

2.10.3 Water Handling Equipment

2.10.3.1 Water Handling Equipment for Drip Coolers

Water handling equipment shall thoroughly wet and continuously flush evaporative surfaces of the media material. The water distribution system shall be designed, to provide equal flow of water directly to the pads or to each trough. Troughs, if used, shall be adjustable hot-dip galvanized steel, stainless steel, or polymeric and suitably designed in a manner that will effectively regulate the flow of water to the media pad to obtain even and complete saturation. Troughs shall be adjustable for leveling or sectionalized and each section supplied with water by means of an individual tube. The water pump shall be a centrifugal type with capacity and head characteristics for the specified operation of the unit and shall be provided with a low water safety shut-off. The motor shaft shall be constructed of stainless steel, hot-dip galvanized steel or cadmium coated steel. The impeller shall be constructed of stainless steel or polymeric material conforming to UL 746C. Pump housing shall be constructed of hot-dip zinc coated steel, brass, or polymeric material conforming to UL 746C. Pump housing bottom shall be removable for impeller cleaning and shall not permit galvanic action with cooler bottom. Pump shall have permanently sealed and lubricated bearings and fan cooled motor with moisture proof winding. Pump motor shall be provided with a factory installed three conductor rubber sheathed flexible cord with the third wire being the grounding conductor. Water pump shall be provided with a filter screen constructed of plastic or bronze which shall project 1 inch above the high water level of the water tank.

2.10.3.2 Water Blowdown Equipment